

A NEW SPECIES OF THE GENUS *NEAERA* ROBINEAU-DESVOIDY (DIPTERA, TACHINIDAE) FROM SICHUAN, CHINA

WANG Qiang, ZHANG Chun-Tian*

Liaoning Key Laboratory of Evolution and Biodiversity, Shenyang Normal University, Shenyang 110034, China

Abstract One new tachinid species from Sichuan of China, *Neaera zhangi* sp. nov., is described and illustrated. A modified key to Palearctic species of *Neaera* is provided. The types are deposited in Institute of Zoology, Chinese Academy Sciences (IZCAS) and the Collection of Insects, Shenyang Normal University (SYNU).

Key words Diptera, Tachinidae, *Neaera*, new species, China.

1 Introduction

Neaera Robineau-Desvoidy, 1830 is a small genus of the tribe Neaerini of Tachininae (Diptera, Tachinidae). Herting (1984) and O'Hara & Wood (2004) separately treat Palearctic *Thapsia* Robineau-Desvoidy, *Glaucocephala* Brauer & Bergerstamm and North American *Euryceromyia* Townsend, *Dichaetoneura* Johnson, *Acronarista* Townsend and *Acronaristopsis* Townsend as synonyms of *Neaera*. Six described species of *Neaera* are currently known, three of them are in the Palearctic and the others in the Nearctic Region (Herting, 1984; O'Hara & Wood, 2004; O'Hara, 2011), only *N. laticornis* (Meigen) is recorded from Inner Mongolia, China (O'Hara, Shima & Zhang, 2009). A new species from Sichuan, China, *Neaera zhangi* sp. nov., is described and illustrated herein, generic diagnosis and a modified key to Palearctic species of *Neaera* are provided.

The biology of *Neaera* is little known. Only *N. leucoptera* (Johnson) is parasitic on the larvae of several lepidopteran species in the families Nymphalidae, Oecophoridae, Olethreutidae and Tortricidae (Arnaud, 1978).

2 Material and Methods

Terminology for morphology and measurements follow Tschorsnig and Richter (1998). The terminalia of male and drawings follow Zhang, Zhao & Wang (2011).

The type specimens of *N. zhangi* sp. nov. are deposited in Institute of Zoology, Chinese Academy of Sciences, Beijing, China (IZCAS) and the Insect Collection of Shenyang Normal University, Liaoning, China (SYNU).

3 Taxonomy

Neaera Robineau-Desvoidy, 1830: 84. Type species: *Neaera immaculata*

Robineau-Desvoidy, 1830 (= *Tachina laticornis* Meigen, 1824), by monotypy.

Synonyms. See Herting, 1984: 117; O'Hara & Wood, 2004: 279; O'Hara, Shima & Zhang, 2009: 157; O'Hara, 2011: 43.

Generic diagnosis. Frons at least 1.3 times as wide as one eye in dorsal view; parafacial bare or with hairs below lowest frontal setae at most on upper half; face not visible in lateral view; male with proclinate orbital setae; occiput with black setulae on posteroventral half; antenna longer than genal height; arista bare and usually thickened on basal half or more; palpus present, sometimes short. Eye bare. Prosternum and proepisternum bare; scutellum with 3 or more pairs of marginal setae, apical setae absent or very short, subapical setae extending back at least to level of apex of apical setae. Wing cell r_{4+5} open; R_1 bare; base of R_{4+5} with a strong single seta or with a strong setulae and a fine seta. Hind tibia with three dorsal preapical setae about equal in length, preapical posteroventral seta shorter than preapical anteroventral seta. Abdomen with pruinose transverse bands, syntergite 1 + 2 not excavate to its hind margin; tergites 3 and 4 with median discal setae (After Tschorsnig & Richter, 1998).

A modified key to the Palearctic species of *Neaera* Robineau-Desvoidy (After Mesnil, 1974)

1. Abdomen without grayish white pruinosity. Fronto-orbital plate with two rows of reclinate setae. Mid tibia only with an anterodorsal seta. Tergite 4 with a pair of median discal setae *N. atra* Robineau-Desvoidy
- Abdomen with grayish white pruinosity. Fronto-orbital plate with a row of reclinate setae. Mid tibia with two or more anterodorsal setae. Tergite 4 with two pairs of median discal setae 2
2. Antenna and basicosta black. Mid tibia with 4 strong anterodorsal setae. Anterior margin 1/2 of tergite 3, 1/3 of tergite 4 and 1/5 of tergite 5 covered with grayish white pruinosity *N. zhangi* sp. nov.
- Pedicel of antenna brownish. Basicosta yellow. Mid tibia with 2 strong anterodorsal setae. Anterior margin 2/3–3/4 of tergite 3 and

* Corresponding author, E-mail: chuntianzhang@yahoo.cn

This research was supported by the National Natural Science Foundation of China (30870331, 31093430, 31272279) and the Talented Foundation of Shenyang Normal University (201012).

Received 27 Aug. 2012, accepted 25 Sep. 2012.

- tergite 4, and 1/6 of tergite 5 covered with grayish white pruinosity 3
 3. Arista slender, thick only at base. Middle of cerci triangular, apex sharp, S-shaped and intilted in lateral view *N. tenuiforceps* Mesnil
 Arista normal. Apex of cerci obtuse in lateral view *N. laticornis* (Meigen)

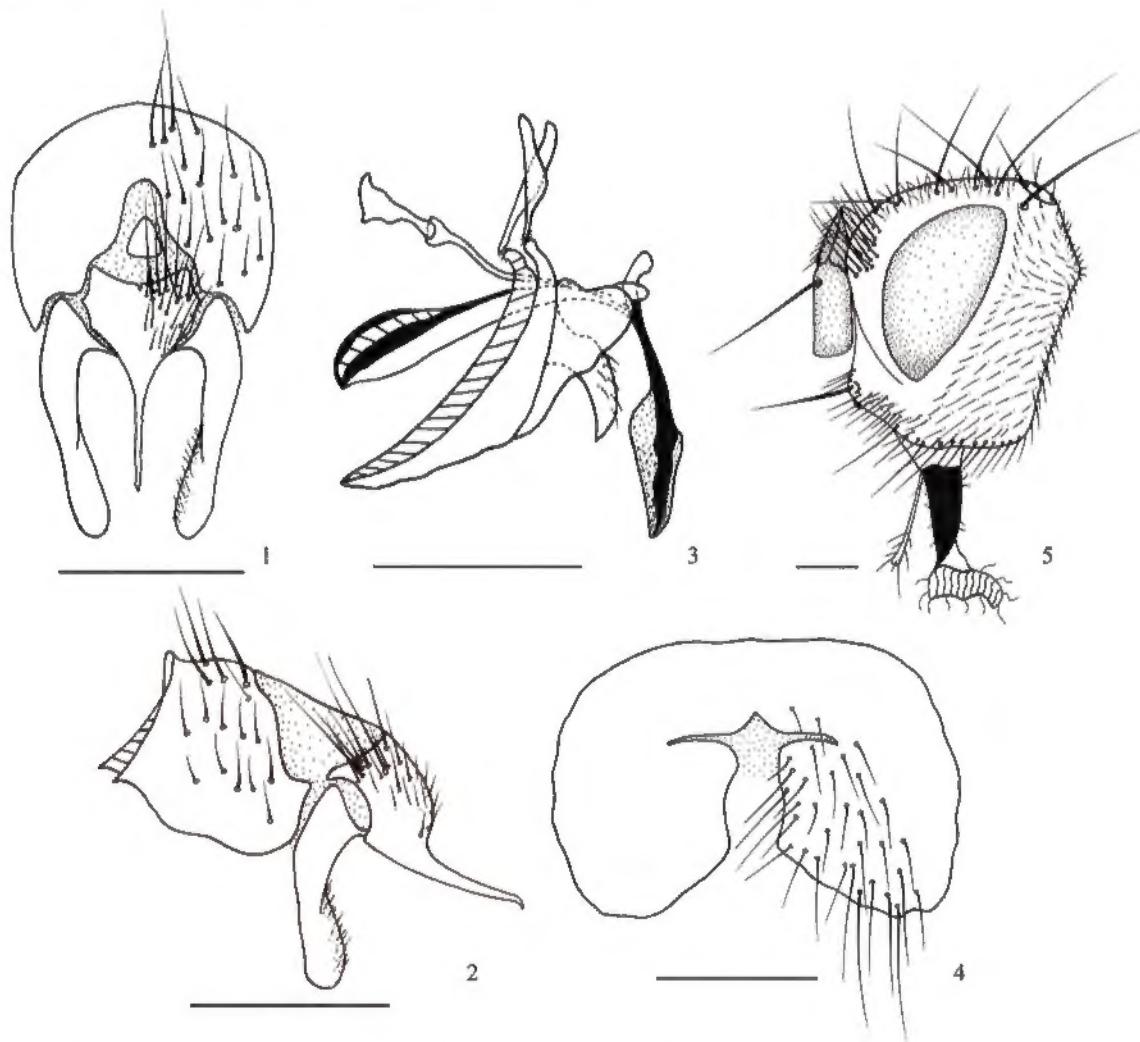
***Neaera zhangi* sp. nov. (Figs 1–9)**

Diagnosis. Body black, frons about 0.4 of head width, 3–4 pairs of strongly proclinate outer orbital setae, basicosta black, mid tibia with 7 anterodorsal (in which 4 stronger) setae, tergites 3 and 4 with 2 pairs of median discal setae.

Description. A black medium-sized species. Body length 8–10 mm.

Male (Figs 6–7). Coloration. Head and occiput black in ground colour, covered with grayish white pruinosity. Frontal vitta dark brown. Fronto-orbital

plate black, covered with grayish white pruinosity. Parafacial black, covered with grayish white pruinosity. Gena reddish brown, covered with thin grayish white pruinosity. Antenna and palpus black. Thorax black in ground colour, covered with thin gray pruinosity, 4 longitudinal black vittae on dorsum, narrow inner vitta about 1/3 times as wide as pruinose portion between outer and inner vittae on presutural scutum. Scutellum black, covered with grayish white pruinosity. Wing brownish on anterior half. Tegula and basicosta black. Lower calypter white, margin yellow. Halter brown on base, anterior half black. Legs black. Pulvillus yellowish. Abdomen black in ground colour, anterior 1/2 of tergite 3, 1/3 of tergite 4 and 1/5 of tergite 5 covered with grayish white pruinosity.



Figs 1–5. *Neaera zhangi* sp. nov. 1. Caudal view. 2–3, 5. Lateral views. 1–2. Epandrium, cerci and surstyli. 3. Aedeagal apodeme, ejaculatory apodeme, hypandrium, pregonite, postgonite, basiphallus, distiphallus in lateral view. 4. Sternite 5. 5. Head. Scale bars = 0.5 mm.

Head (Fig. 5). Eye bare. Frons about 0.4 of head width at narrowest point. Fronto-orbital plate

about as wide as frontal vitta. Parafacial about 1.4 times width of flagellomere 1 in lateral view. Genal



Figs 6–9. *Neaera zhangi* sp. nov. 6–7. Male. 8–9. Female.

height about 3/7 of eye height in lateral view, sparsely with fine hairs on lower margin and 3–4 long setae. Facial ridge with setae on lower 1/3. Six pairs of inclinate frontal setae and 5–7 irregular long setae on anterior fronto-orbital plate and upper parafacial, lowest one reaching lower level of base of flagellomere 1; fronto-orbital plate sparsely with fine short black hairs, the lowest hairs below lowest frontal seta. Three to 4 pairs of strongly proclinate outer orbital setae about as long as frontal setae. Inner vertical seta thick and strong, about 1.1 times as long as eye height. Outer vertical seta thick and strong, 0.7 times as long as inner vertical seta. Two strong ocellar setae outward, situated between anterior and posterior ocelli, 0.3–0.4 times as long as inner vertical seta. One pair of postocellar setae shorter than ocellar seta. Occiput inflated, with black hairs, some long white

hairs at middle. Vibrissae situated at lower margin of face, and a row of subvibrissae below vibrissa. Flagellomere 1 2.0–2.3 times as long as wide and 1.5–1.7 times as long as pedicel. Pedicel with short setae on back and short black hairs on lateral surface. Arista thick on basal 1/2, first aristomere shorter than wide, second aristomere 3 times as long as wide. Palpus slightly inflated at apex, covered with fine black hairs, about 0.5 times as long as prementum, the latter 3–4 times as long as wide.

Thorax. Covered with short and erect black hairs. Postpronotum with 3 setae arranged in a triangle. One presutural and 1 postsutural acrostichal setae. Three presutural and 3 postsutural dorsocentral setae. Three postsutural intra-alar setae. Three to four supra-alar setae, the first one as long as notopleural seta, the second one 1.7–1.8 times as long as the first

one. Scutellum with 3 pairs of marginal setae, apical setae absent, strong subapical setae parallel, 3.3–3.5 times as long as scutellum. One pair of lateral scutellar setae, as long as subapical scutellar setae, one pair of basal setae, 2.1–2.3 times as long as scutellum. One pair of scutellar discal seta, 1.6–1.7 times as long as scutellum. Prosternum bare, about twice as long as wide. Three katepisternal setae. Katepimeron bare. Wing. Broad. Costal spine distinct, about twice as long as crossvein r_m . Second costal section bare ventrally. Relative length of costal sections 2nd, 3rd and 4th approximately as 1.0 : 2.5 : 1.2. R_1 bare. Bend of vein M obtuse. Cell r_{4+5} open. Vein M from $dm-cu$ crossvein to its bend about 2 times distance between bend and posterior margin of wing. Crossvein $dm-cu$ slightly curved, slightly longer than last section of CuA_1 . Lower calyptere developed, its inner margin close to lateral margin of scutellum. Apex of halter subequal in size to posterior spiracle. Legs. Fore tarsi about as long as head height. Claw of fore leg equal to or shorter than 5th tarsomere. Fore tibia with a complete row of anterodorsal, 4 posterodorsal and 3 posterior setae, apex with 1 anterodorsal, 1 shorter dorsal, 1 posterodorsal, 1 posterior and 1 strong posteroventral setae. Mid tibia with 7 anterodorsal (4 of them stronger), 6 posterodorsal and 1 ventral setae. Hind tibia with a row of anterodorsal setae (5 of them stronger), 4–5 posterodorsal and 3 ventral setae, apex with 1 anteroventral, 4 dorsal and 1 posterior setae.

Abdomen. Long ovate, tergite 4 about as long as tergite 5. Tergites with black hairs, syntergite 1+2 separately with a pair of lateral marginal and median marginal setae, 3–4 pairs of lateral discal setae. Tergite 3 separately with 2 pairs of median discal setae, a pair of median marginal, 3 pairs lateral marginal and 2 pairs lateral discal setae. Tergite 4 with 2 pairs of median discal, a pair of lateral marginal setae, 3–4 pairs of lateral discal, a row of marginal setae. Tergite 5 separately with rows of median discal and a row of marginal setae. Sternite 5 and male terminalis are as Figs 1–4.

Female (Figs 8–9). Very similar to male except as follows: body length distinctly smaller than male. Frontal vitta distinctly wider than fronto-orbital plate. Flagellomere 1 twice as long as wide and 1.8–2.0 times as long as pedicel. Arista thick on basal 3/7. Four pairs of inclinate frontal setae and anterior fronto-orbital plate and upper parafacial with 3–4 irregular

long setae. Abdomen broad and flat. Other characters are same as in male.

Holotype male, Keluodong ($31^{\circ}58'N$, $98^{\circ}41'E$; alt. 3 500 m), Dege, Sichuan, China, 5 July 1983, ZHANG Xue-Zhong (IZCAS). Paratypes: 1 male and 1 female, Zheduotang, alt. 3 000–3 100 m, Kangding, Sichuan, China, 7 July 2006, FENG Li-Yong (SYNU).

Etymology. Specific name is dedicated to the collector ZHANG Xue-Zhong (IZCAS), for his contributions to the collection of Chinese Diptera.

Remarks. This species is similar to *N. laticornis* (Meigen) from China, Mongolia, Central Asia, Middle East, Russia and Europe, but is distinguished from the latter in having the black basicosta, mid tibia with 7 anterodorsal (4 stronger), 6 posterodorsal and 1 ventral setae, abdomen without black median vittae on dorsum, anterior margin 1/2 of tergite 3 and 1/3 of tergite 4 covered with grayish white pruinosity, tergite 4 about as long as tergite 5.

Acknowledgements We are particularly grateful to J. E. O'Hara (Agriculture and Agri-Food Canada, Ottawa, Canada) and two anonymous reviewers for their valuable suggestions and careful corrections of the manuscript.

REFERENCES

- Arnaud, P. H., Jr. 1978. A Host-Parasite Catalog of North American Tachinidae (Diptera). *United States Department of Agriculture Miscellaneous Publication*, 1 319: 1–860.
- Herting, B. 1984. Catalogue of Palearctic Tachinidae (Diptera). *Stuttgarter Beiträge zur Naturkunde. Serie A (Biologie)*, 369: 1–228.
- Mesnil, L. P. 1974. 64g. Larvaevorinae (Tachininae). *Die Fliegen der Paläearktischen Region*, 10 (Lieferung 304): 1 233–1 304.
- O'Hara, J. E. and Wood, D. M. 2004. Catalogue of the Tachinidae (Diptera) of America North of Mexico. *Memoirs on Entomology, International*, 18: 1–410.
- O'Hara, J. E., Shima, H. and Zhang, C-T. 2009. Annotated catalogue of the Tachinidae (Insecta: Diptera) of China. *Zootaxa*, 2190: 1–236.
- O'Hara, J. E. 2011. World Genera of the Tachinidae (Diptera) and Their Regional Occurrence. Version 6.0. PDF document, 43 pp. Available from: http://www.nadsdiptera.org/Tach/Genera/Gentach_ver6.pdf (accessed Jan. 2012).
- Tschorsig, H. P. and Richter, V. A. 1998. Family Tachinidae. In: Papp, L. and Darvas, B. (eds.), Contributions to a Manual of Palearctic Diptera (with Special Reference to Flies of Economic Importance). Vol. 3. Higher Brachycera. Science Herald, Budapest. pp. 691–827.
- Zhang, C-T, Zhao, Z and Wang, Q. 2011. New species and new records of Tachinidae from Liaoning Laotudingzi Nature Reserve of China (Insecta, Diptera). *Acta Zootaxonomica Sinica*, 36 (1): 63–73.

中国四川尼寄蝇属一新种（双翅目，寄蝇科）

王 强 张春田*

沈阳师范大学，生物进化和生物多样性辽宁省重点实验室 沈阳 110034

摘要 发现并描述产自中国四川的寄蝇科1新种，张氏尼寄蝇 *Neaera zhangi* sp. nov.; 给出修订的古北区该属分种检索表；新种模式标本分别保存在中国科学院动物研究所（IZCAS）和沈阳师范大学昆虫标本馆（SYNU）。

张氏尼寄蝇，新种 *Neaera zhangi* sp. nov.（图1~9）

新种外形近似分布在我国内蒙古、中亚、中东、欧洲和俄罗斯西部及东西伯利亚的宽角尼寄蝇 *N. laticornis* (Meigen)，但新种翅前缘基鳞黑色；中足胫节具有7根（其

中4根强壮）前背鬃，6根后背鬃和1根腹鬃；腹部背板无黑色中纵条，第3背板的前1/2和第4背板的前1/3覆灰白色粉被，第4背板与第5背板几乎等长。

正模♂，四川德格柯洛洞（ $31^{\circ}58'N, 98^{\circ}41'E$ ），1983-07-05，张学忠采。副模：1♂，1♀，四川康定折多塘，2006-07-07，冯立勇采。

词源：新种种名源自正模采集者张学忠先生姓氏，纪念他对中国双翅目昆虫研究的贡献。

关键词 双翅目，寄蝇科，尼寄蝇属，新种，中国。

中图分类号 Q969.453

* 通讯作者，E-mail: chuntianzhang@yahoo.cn